

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-46

Name: New Underwood Lake

County: Pennington

Legal description: NM ¼ Sec 30, T 2N, R 11E

Location from nearest town: ½ mile N, ½ mile W of New Underwood, SD

Dates of present survey: June 10-11, 2013

Date last surveyed: June 1, 27-28, 2011

Management classification: Warmwater semi-permanent

Primary Species:(game and forage)

1. Black Crappie
2. Bluegill
3. Largemouth Bass

Secondary and other species:

1. Black Bullhead
2. Golden Shiner
3. Channel Catfish

PHYSICAL CHARACTERISTICS

Surface Area: 20 acres

Watershed: 1,920 acres

Lake elevation at survey (from known benchmark): -0.5 feet

Ownership of lake and adjacent lakeshore property:

The lakeshore is owned by the South Dakota Department of Game, Fish and Parks and managed as a lake access area.

Fishing Access

Fish access is decent with a two-track trail around the lake. A gravel boat ramp exists and is useable when the lake is near full. Vegetation limits the amount of shoreline used for fishing as the summer progresses, and by mid-June only the dam grade is a viable shore fishing area.

Observations of Water Quality and Aquatic Vegetative:

Cattails surround much of the lake. Submerged vegetation can be troublesome in mid to late summer and is found in water less than six feet.

Observations on condition of structures (i.e. spillway, boat ramps and docks, roads, etc)

All structures associated with New Underwood dam appeared to be in good condition. No problems were identified by department personnel.

BIOLOGICAL DATA

Sampling Effort and Catch

A lake survey was conducted on June 10-11, 2013 using four trap nets. The trap nets were modified fyke nets consisting of a 1.3 X 1.5 m frame, 19.1 mm (0.75 in) mesh and a 1.2 X 23 m (3.9 X 75.5 ft) lead. Sampling consisted of overnight sets for four trap net locations (Figure 1).

Only three nets were used in the sample as one had been pulled and emptied. Species and numbers caught are shown in Table 1. Discussion on selected fish species follows and completes this report.

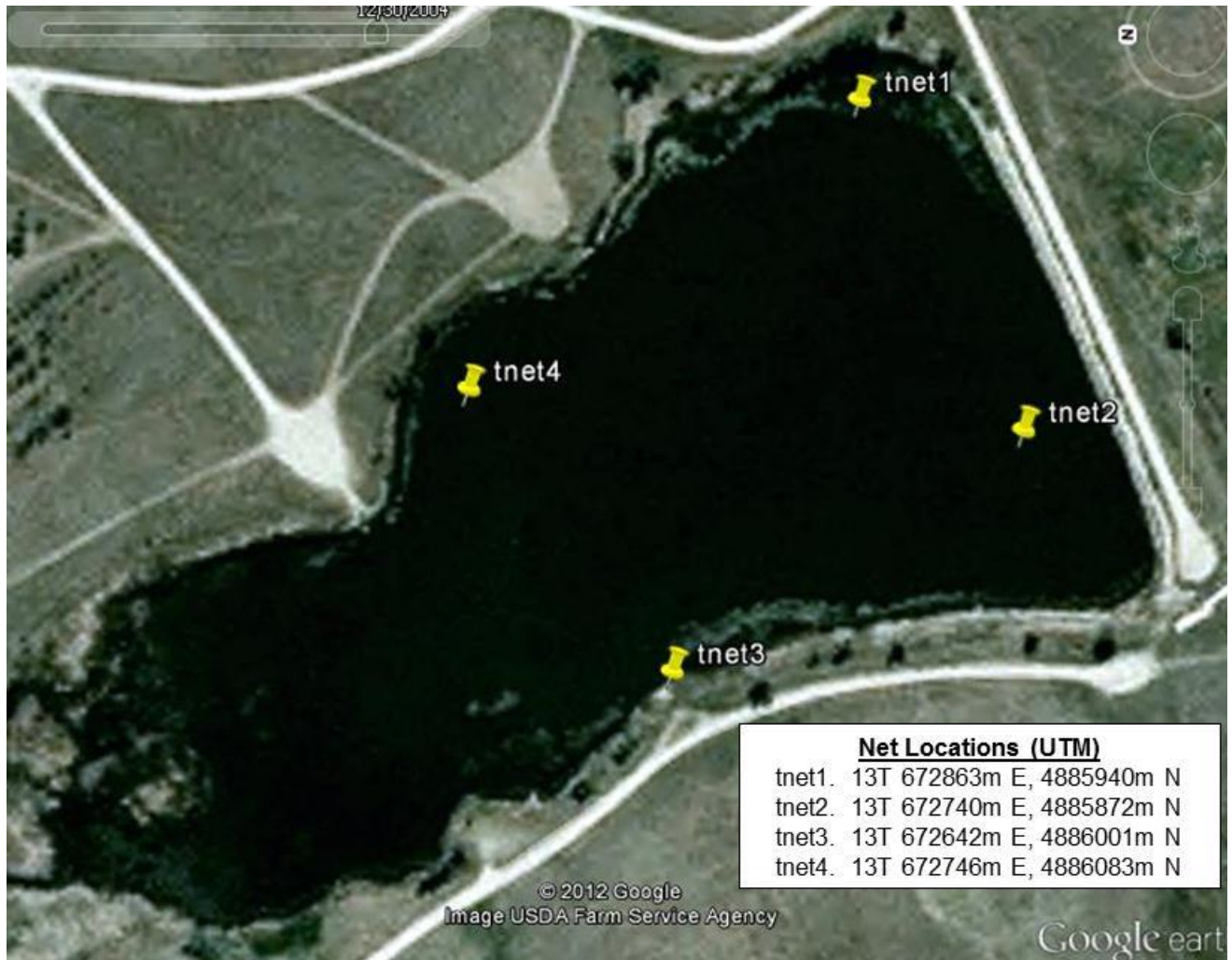


Figure 1. Trap net locations with GPS coordinates at New Underwood Lake, Pennington County, in UTM's from the 2013 lake surveys.

Table 1. Catch data from all species collected in three trap nets in New Underwood Lake, Pennington County, June 10-11, 2013. CPUE's with 80% confidence intervals in parentheses. PSD, PSD-P and Wr with 90% confidence intervals in parentheses.

Species	N	CPUE	CPUE-S	PSD	PSD-P	$Wr \geq S$
Black Bullhead	71	23.7 (8.7)	23.3 (8.8)	99 (3)	14 (7)	112.0 (1.4)
Black Crappie	10	3.3 (2.3)	3.3 (2.3)	70 (28)	0	97.1 (7.2)
Bluegill	448	149.3 (30.5)	149.3 (30.5)	96 (2)	6 (2)	114.7 (1.2)
Golden Shiner	3	1.0 (1.1)	--	--	--	--
White Sucker	1	0.3 (0.6)	0.3 (0.6)	--	--	97.6 (--)
Yellow Perch	42	14.0(6.6)	14.0(6.6)	55 (13)	0	89.3 (1.0)

Black Bullhead

Black Bullhead density appears to have increased since 2011, when trap net CPUE was 6.3. This year CPUE was 23.7 (Table 1). Size structure has also increased and was PSD of 99 and PSD-P of 14 during this survey. In the 2011, PSD was 63 and PSD-P was 0. Fish condition is excellent with a *Wr* for stock length and larger of 112. The length frequency histogram shows a population dominated by fish between 230-320 mm in length (Figure 2).

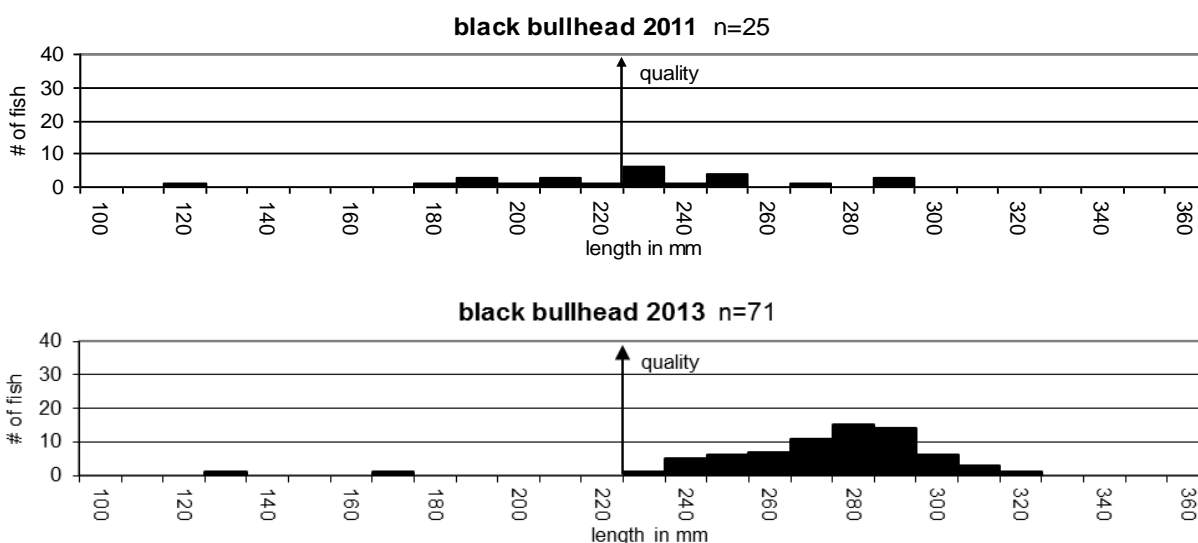


Figure 2. Length frequencies of Black Bullhead collected by trap nets in New Underwood Lake, 2011 and 2013.

Bluegill

Bluegill were the most abundant species sampled in the trap nets with a CPUE of 149.3 (Tables 1 and 2). This is a substantial decrease from 2011, when CPUE was 19.3. Size structure was similar to last year. Stock indices this year were a PSD of 96 and PSD-P of 6 and the 2011 fish sample had a PSD of 73 and PSD-P of 4. Fish condition was excellent with *Wr* for stock length and larger fish of 114.7. The length frequency histogram shows most fish between quality and preferred length (Figure 3). A Bluegill population of this density and size structure should provide a quality fishery in New Underwood Lake.

Table 2. Composite listing of data for Bluegill collected by trap nets in New Underwood Lake, 2009, 2011 and 2013. CPUE's with 80% confidence intervals in parentheses. PSD, PSD-P and *Wr* with 90% confidence intervals in parentheses

Year	N	CPUE-S	PSD	PSD-P	<i>Wr</i> >S
2009	38	9.5 (7.8)	8 (8)	0	122.9 (1.6)
2010	144	48.0 (47.9)	60 (7)	1 (1)	117.6 (1.3)
2011	105	19.3 (9.9)	73 (8)	4 (3)	109.2 (1.1)
2013	448	149.3 (30.5)	96 (2)	6 (2)	114.7 (1.2)

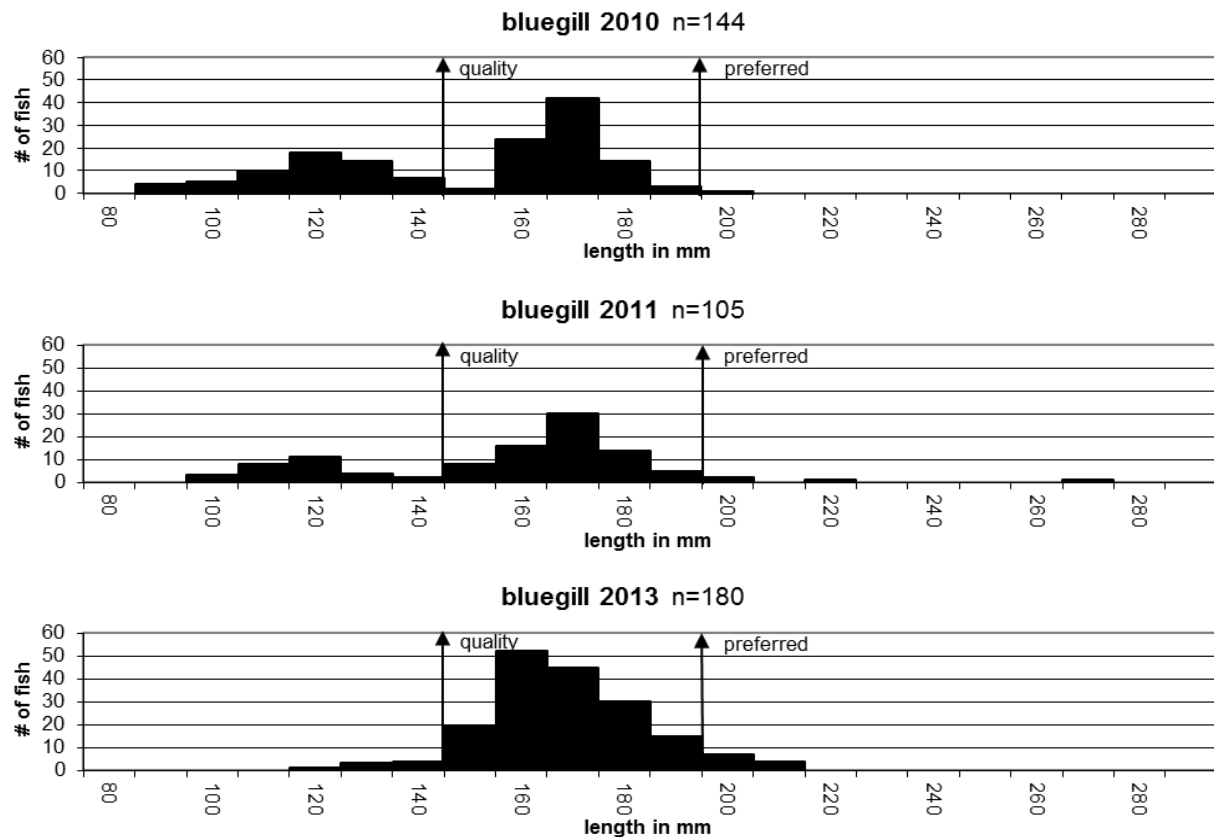


Figure 3. Length frequencies of Bluegill collected by trap nets in New Underwood Lake, 2010, 2011, 2013.

Yellow Perch

Yellow Perch numbers were a big surprise in 2009 due to the very low water level and the high numbers of dead fish, Black Bullheads included, observed from winterkill in 2007. Since no stockings of Yellow Perch have occurred in the past few years it appears some Yellow Perch survived and the population is rebuilding. In 2010, only two larger Yellow Perch were sampled (Figure 4). Then in 2011, fourteen smaller Yellow Perch were sampled, showing some recruitment. This survey sampled 42 Yellow Perch yielding a PSD of 55 (Table 1).

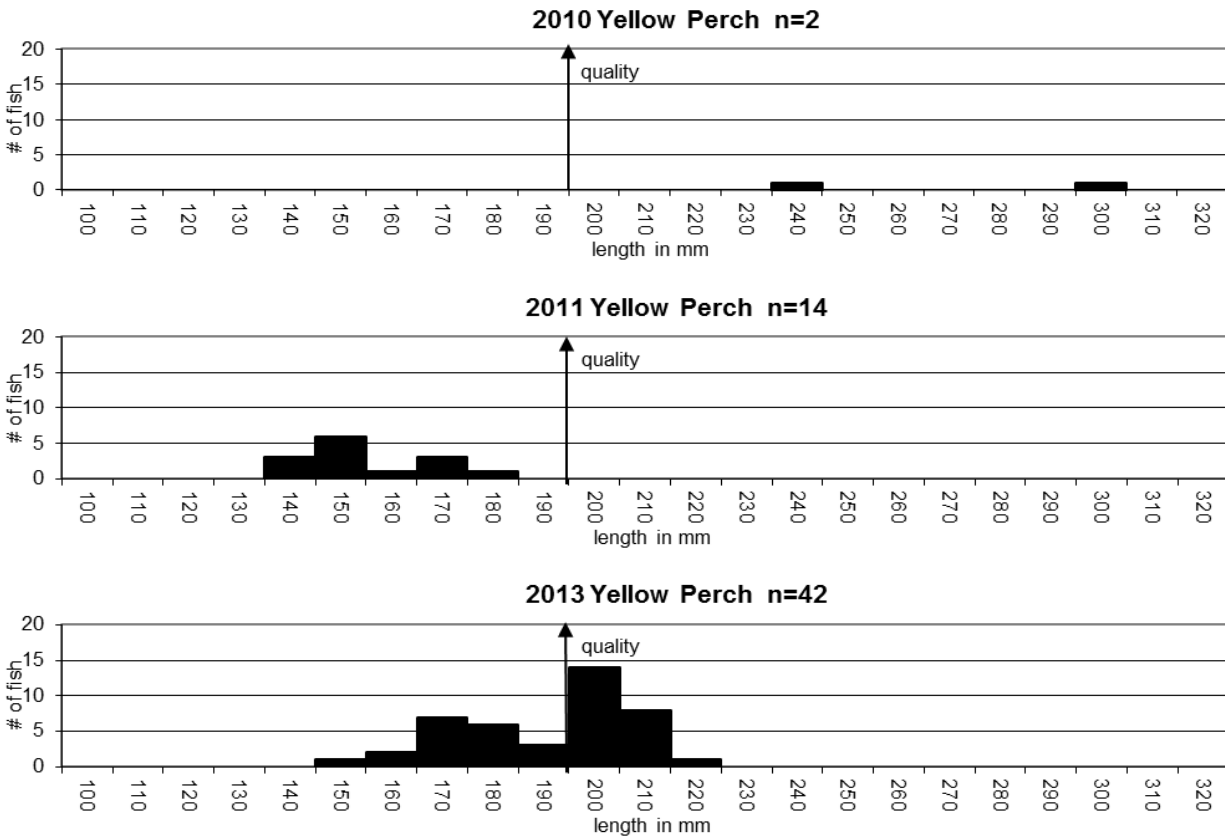


Figure 4. Length frequencies for Yellow Perch collected by trap nets in New Underwood Lake, 2010-2011, 2013.

RECOMMENDATIONS

1. Continue conducting lake surveys biennially to monitor Largemouth Bass and panfish populations and to evaluate the 15-inch minimum regulation for Largemouth Bass.
2. Continue to stock Channel Catfish to provide a unique angling opportunity at this well-utilized fishery.
3. Stock adult Yellow Perch and Black Crappie to provide more angling opportunity.

APPENDIX

Appendix A. Stocking record for New Underwood Lake, Pennington County, 2002-2013.

Year	Number	Species	Size
2002	2,680	Largemouth Bass	Fingerling
2003	200	Largemouth Bass	Adult
	30	Channel Catfish	Adult
2004	336	Channel Catfish	Adult
2006	217	Channel Catfish	Adult
2008	300	Black Crappie	Adult
	90	Largemouth Bass	Adult
	1,500	Largemouth Bass	Fingerling
	40	Bluegill	Adult
	8,000	Bluegill	Fingerling
2009	200	Channel Catfish	Adult
	300	Largemouth Bass	Juvenile
2010	23	Channel Catfish	Adult
2011	200	Channel Catfish	Adult
2012	1,500	Largemouth Bass	Fingerling